

REMARKS/ARGUMENTS

Upon entry of the amendments, claims 1-63 will be pending. Claims 3, 7-9, 21-23, 26, 29, 33-56 and 58-63 have been withdrawn pursuant to the Restriction Requirement. Reconsideration of rejected claims 1, 2, 4-6, 10-20, 24, 25, 27-28, 30-32 and 57 is respectfully requested.

I. Rejection of Claims 1, 2, 6, 10, 11, 13, 14, and 57 under 35 U.S.C. § 102(b)

Claims 1, 2, 6, 10, 11, 13, 14, and 57 have been rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Sinyakov et al. (Molecular Biology, 2001, 35, 251-260, hereinafter "Sinyakov"). The Examiner alleges that the minor groove binder MGB-4 described in Figure 2 of Sinyakov anticipates the claimed invention. Applicants respectfully disagree.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. M.P.E.P. § 2131.

Applicants submit that Sinyakov fails to disclose the oligonucleotide-negatively charged minor groove binder conjugate of the claimed invention. The present invention is directed to an oligonucleotide-negatively charged minor groove binder **conjugate** comprising: a **negatively charged minor groove binder moiety** comprising: at least one aryl moiety, and at least one **acidic moiety** capable of ionizing under physiological conditions, wherein said acidic moiety is covalently attached to at least one of said aryl moiety and optionally comprises an acidic moiety linker; and an oligonucleotide moiety which is covalently attached to said negatively charged minor groove binder moiety. Therefore, the minor groove binder moiety in the conjugate of the present invention contains the acid moiety, which is capable of ionizing to negatively charged group.

In contrast, the minor groove binder in the conjugate of Sinyakov does **not** contain any acidic moiety because the carboxylic acid group has been **consumed** during the formation of the oligonucleotide-minor groove binder conjugate (see, Figure 3, route (a)). As a

result, the minor groove binder moiety in the conjugate of Sinyakov *no longer* has a carboxylic group and is *not* negatively charged.

Figure 3 of Sinyakov illustrates the formation of the conjugate of oligonucleotide HIV-T and minor groove binder MGB-4. The carboxylic acid group on MGB-4 is first converted into succinimide ester and subsequently used up in coupling with the oligonucleotide HIV-T to form the conjugate (see, Figure 3, route (a)). Consequently, the MGB-4 moiety in the conjugate does *not* have any ionizable carboxylic acid group (see, Figure 3). Therefore, Sinyakov fails to teach a minor groove binder *conjugate* comprising: a *negatively charged minor groove binder moiety* as recited in the claimed invention. Accordingly, Applicants respectfully request that the rejection of claims 1, 2, 6, 10, 11, 13, 14, and 57 under 35 U.S.C. § 102(b) over Sinyakov be withdrawn.

II. Double Patenting

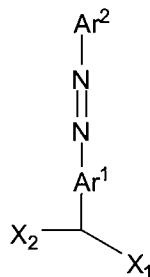
Claims 1, 2, 4-6, 10-20, 24, 25, 27-28, 30-32 and 57 have been rejected under the judicially created doctrine of obviousness type double patenting as being allegedly unpatentable over claims 1-34 of U.S. Patent No. 6,790,945. Applicants respectfully disagree.

As set forth in MPEP §804: In determining whether a nonstatutory basis exists for a double patenting rejection, the question to ask is whether the invention defined in a claim in the application would have been anticipated by, or an obvious variation of the invention defined in a claim in a patent. *In re Berg*, 46 USPQ2d 1226 (Fed. Cir. 1998).

Applicants submit that claims 1-34 of U.S. Patent No. 6,790,945 ("the '945 patent") do not render claims 1, 2, 4-6, 10-20, 24, 25, 27-28, 30-32 and 57 of the presently claimed invention obvious. Claims 1, 2, 4-6, 10-20, 24, 25, 27-28, 30-32 and 57 are directed to an oligonucleotide-*negatively charged minor groove binder conjugate* comprising: a negatively charged minor groove binder moiety comprising: at least one aryl moiety, and at least one acidic moiety capable of ionizing under physiological conditions, wherein said acidic moiety is covalently attached to at least one of said aryl moiety and optionally comprises an acidic moiety

linker; and an oligonucleotide moiety which is covalently attached to said negatively charged minor groove binder moiety.

In contrast, claims 1-34 of the '945 patent recite an aryl azo phosphoramidite compound having the formula:



wherein Ar¹ and Ar² are each independently a substituted or unsubstituted aryl group, where at least one of Ar¹ and Ar² is a substituted aryl; X₁ is selected from the group consisting of OH, O-dimethoxytrityl, O-methoxytrityl, O-trityl and an oxygen atom having an acid labile blocking group; X₂ is a phosphoramidite; and W is a linking group having from 3 to 100 backbone atoms selected from C, N, O, S, Si and P, said linking group being cyclic, acyclic, aromatic or a combination thereof. Clearly, the azo aryl phosphoramidite compounds of claims 1-34 of the '945 patent are structurally *very different* from the compounds of the claimed invention. Moreover, nowhere does claims 1-34 of the '945 patent teach or suggest an oligonucleotide-*negatively charged minor groove binder conjugate* as set forth in the claimed invention. Therefore, claims 1-34 of '945 patent do not render the instant claims obvious. Accordingly, Applicants respectfully request that the double patenting rejection of 1, 2, 4-6, 10-20, 24, 25, 27-28, 30-32 and 57 be withdrawn.

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PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,



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